REMARKS

The Examiner has rejected claims 1, 9, and 10 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,714,496 to Park et al. The Examiner has further rejected claim 3 under 35 U.S.C. 103(a) as being unpatentable over Park et al. in view of U.S. Patent 6,266,301 to Morimoto. In addition, the Examiner has rejected claims 2 and 11 under 35 U.S.C. 103(a) as being unpatentable over Park et al. in view of U.S. Patent 6,181,670 to Nagasato. Moreover, the Examiner has rejected claims 4, 6, 8 and 12 under 35 U.S.C. 103(a) as being unpatentable over Park et al. in view of U.S. Patent 5,627,808 to Hajjar et al. The Examiner has furthermore rejected claim 5 under 35 U.S.C. 103(a) as being unpatentable over Park et al. in view of Hajjar et al., and further in view of U.S. Patent 5,602,566 to Motosyuku et al. Applicants acknowledge that the Examiner has found claim 7 allowable over the prior art of record.

The Park et al. patent discloses a method for calibrating tilt in disc player, in which the time (FET1) needed for the optical pickup unit to achieve focus when it is traveling from a low point to a high point is measured, and the time (FET2) needed for the optical pickup unit to achieve focus when it is traveling from a high point to a low point is measured. Based on the difference between these times and a standard time measurement, the disc is tilted using a tilt motor to compensate for any tilting of the disc.

As indicated in MPEP § 2131, it is well-founded that

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051,1053 (Fed.Cir.1987). Further, "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed.Cir.1989).

The Examiner has indicated, in part, that Park et al. teaches "control means for generating two focus controlling outputs (FET1 and FET2)" and "actuating means (function performed by element 30 of figure 5) for controlling a focusing state and the radial tilt of the optical recording/reproducing beam based on said two focus controlling outputs".

Applicant submits that the Examiner is mistaken. In particular, the signals FET1 and FET2 being produced by Park et al. are not focus controlling outputs, but rather are time measurements. As described in Park et al. at col. 3, lines 3-45, FET1 and FET2 are time measurements during which the optical pickup unit 20 is caused to ascend and descend, respectively. These time measurements are then used to control the tilt of the disc turntable using the tilt motor 40. Nowhere is there any disclosure or suggestion in Park et al. that FET1 and FET2 are, or should be used to control the focus of the optical pickup unit 20.

With regard to the claimed actuating means, as described in Park et al. at col. 8, lines 5-53, the motor driving signal generator 30 generates a signal for tilt motor 40 to tilt the

turntable 10 carrying the disc. At nowhere is there any disclosure that the tilt of the recording/reproducing beam is being changed. In fact, as clearly shown in Figs. 6A and 6B, the optical pickup unit 20 and the beam generated thereby are not affected by any change in the tilt motor 40.

The Morimoto patent discloses an optical storage device and optical head having TES compensation shift signal compensation in which a PID controller is used to output focus controlling signals. However, Applicants submit that Morimoto does not supply that which is missing from Park et al., i.e., "actuating means for controlling a focusing state and the radial tilt of the optical recording/reproducing beam based on said two focus controlling outputs".

The Nagasato patent discloses an objective lens mounting apparatus and objective lens driving apparatus which includes an electromagnetic actuator for moving the objective lens for translation in the focusing direction and tracking direction, and for turning in the tangential tilt direction and in the radial tilt direction.

The Examiner indicates that "Nagasato teaches in figure 7 the device as claimed in claim 1, characterized in that said actuating means comprises a split focus coil arrangement for providing focus and tilt adjustment (done by elements 112 and 114), and said control means supplies said two focus controlling outputs (currents sent to drive each coil) to respective coils of said split focus coil arrangement."

Applicant submits that the Examiner is mistaken. In particular, Nagasato does not show or suggest a split focus coil arrangement. Rather, Nagasato discloses two driving coil assemblies 112 and 114 arranged on opposite sides of the objective lens. As stated in Nagasato at col. 8, line 59 to col. 9, line 3:

> "Each of the driving coil assemblies 112 and 114 has a focusing coil, a tracking coil, a radial tilt coil and a tangential tilt coil. The driving coil assemblies 112 and 114 consisting of the plurality of coils, and the electromagnetic 116 and 118 constitute the plurality of component magnetic circuits of the magnetic actuator.
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> "Driving currents are supplied to the coils of the driving coil assemblies 112 and 114 by a power source, not shown. The driving currents are controlled on the basis of control signals to control driving operations to drive a movable unit 30 including the objective lens 1 for movement relative to the support block 6."

From the above, it appears that each of the coil assemblies 112 and 114 have a plurality of independent coils, each receiving its own driving current. Further, since the power supply and the particular driving currents are not shown or disclosed in Nagasato, one can only presume that separate driving currents are provided to each of the coils of each of the coil assemblies. Hence, as opposed to the two focus controlling outputs being supplied to the coils of the split focus coil arrangement as claimed in claim 2, Nagasato discloses at least 8 different driving currents being supplied to the 8 separate coils in the coil assemblies 112 and 114.

Applicant would further like to note that if the coil arrangements of Nagasato were to instead be incorporated into Park et al., then the coil arrangements would be controlling the tilt of

the turntable, and not the tilt of the optical recording/reproducing beam.

The Hajjar et al. patent discloses a cross-track tilt error compensation method for optical disc drives in which a tracking offset signal (TOS) is derived as a function of the cross-track tilt between the disc and the optical head for application to a tracking error signal (TES) for offsetting an optical servo system thereby compensating for the cross-track tilt between the disc and the optical head.

The Examiner now states:

> "Regarding claim 4, Hajjar et al. teaches the device as claimed in claim 1, characterized in that said control means ("control actuator") positions a sledge (optical head of element 9 in figure 6 is designed to move to control tracking to serve the same function as the sledge) at at least two different radial positions, controls said actuating means to adjust the focus, and measures said focus control values at said at least two different radial positions (column 3, lines 45-50)."

Applicant submits that the Examiner is mistaken. In particular, while Hajjar et al. discusses the focus height signal as a function of radii for 3 separate discs, Hajjar et al. does not teach controlling the relative radial tilt in that there are no means disclosed or suggested in Hajjar et al. that would enable the radial tilt to be controlled. Rather, Hajjar et al. electronically compensates for the radial tilt by offsetting the tracking error signal. This is clearly indicated in Hajjar et al. at col. 3, lines 18-23, where it is stated "It is therefore important to compensate for the presence of cross-track tilt by generating an additional tracking offset signal to be added to the tracking error signal."

Again, Hajjar et al. is compensating for the tilt, not correcting the tilt.

Further, it is unclear what the combination of Hajjar et al. with Park et al. would yield. However, at most, the combination would include electronic compensation with adjustment of the tilt angle of the disc.

The Motosyuku et al. patent discloses a small-sized information processor capable of scrolling screen in accordance with tilt, and scrolling method therefor, in which, as indicated in the Abstract:

> "A small-sized information processor which is used while being held in one hand, and which can scroll a display screen in accordance with a tilt. When a scroll start switch is depressed, the tilt angle of a display unit at this time is detected as an initial tilt angle by a tilt sensor. When a predetermined time period has lapsed since the depression of the switch, the tilt angle of the display unit is detected as a second tilt angle by the tilt sensor. The initial tilt angle is subtracted from the second tilt angle by a processing unit, thereby calculating the relative tilt angle of the display unit. The processing unit scrolls the display screen of the display unit on the basis of the calculated relative tilt angle. The scrolling speed of the display unit may well be changed in accordance with the width of the relative tilt angle."

Firstly, Applicant would like to note that Motosyuku et al. is not analogous art, in that Motosyuku et al. is not concerned about correcting or compensating for tilt, but rather, controls scrolling of an image on display based on the difference in tilt from an initial position.

Further, according to the Examiner:

> "Motosyuku et al teaches a device according to claim 1, characterized in that said control means is arranged to

> set a mean disc tilt value in a tilt register (column 7, lines 32-50). The device taught records the tilt angle value of a processor into a register. This is similar to recording the tilt value of a disc as both inventions relate to fixing errors caused by tilt, although they are for two different devices."

First, by merely reading this section of Motosyuku et al., it should be apparent that there is no mean tilt value determined or stored in Motosyuku et al. Rather, an actual tilt value is stored in a register. Further, Applicant submits that the Examiner's understanding of Motosyuku et al. is flawed, in that Motosyuku et al. is not concerned with "fixing errors caused by tilt", but rather, is using the tilting of a handheld device in order to control scrolling of the content being displayed on a display screen of the handheld device.

Hence, Applicant submits that Motosyuku et al. neither shows nor suggests "said control means calculates a mean disc tilt value in a tilt register".

Further, Applicant submits that Motosyuku et al. does not supply that which is missing from Hajjar et al. and Park et al., i.e., "control means for generating two focus controlling outputs" and "actuating means for controlling a focusing state and the radial tilt of the optical recording/reproducing beam based on said two focus controlling outputs".

In view of the above, Applicant believes that the subject invention, as claimed, is neither anticipated nor rendered obvious by the prior art, either individually or collectively, and as such, is patentable thereover.

Applicant believes that this application, containing claims 1-12, is now in condition for allowance and such action is respectfully requested.

Respectfully submitted,

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